

**REMARKS**

Claims 40-53 and 56-62 are presently pending. Claim 50 has been amended to replace the term "corresponding" with the term "from." Claims 61 and 62 have been amended to correct typographical errors pointed out in the claim objection at pages 3 and 4 of the Office Action mailed May 31, 2007. No new matter is introduced by the amendment and entry is respectfully requested.

**Regarding the Claim Objections**

Claims 61 and 62 have been corrected as suggested in the Office Action mailed May 31, 2007, and withdrawal of the objection is respectfully requested.

**Regarding 35 U.S.C. § 112, Second Paragraph**

Applicants respectfully traverse the rejection of claims 41-53 and 56-62 under 35 U.S.C. §112, second paragraph, as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention.

Claims 41 and 42 are allegedly indefinite over the recitation of the phrase "a method of determining the origin of a fish sample. This phrase is considered indefinite because it is allegedly unclear if "origin of a fish sample" refers to the "population of origin " or if it refers to the parentage of origin. It is respectfully requested that claims 41 and 42 are clear as written.

Claim 50 recites the limitation "the extracted nucleic acid." It is alleged that there is insufficient antecedent basis for this limitation in the claim because, although the claim previously refers to a step of "extracting nucleic acid" it does not refer to "extracted nucleic acid." It is respectfully submitted that this phrase is clear to the skilled person and in no way renders the claim insolubly ambiguous.

Claims 60-62 are alleged to be indefinite for failing to further limit the subject matter of a previous claim. Applicants respectfully disagree. Claims 60-62 add additional elements to the base claim and represent proper dependent claims.

Claims 61 and 62 are rejected over the phrase "wherein said central database is capable of instantaneously comparing said sample genotype to said collection of candidate parent genotypes. Capability is a latent characteristic and the claims do not set forth the criteria by which to determine capability. That is, it is not clear as to whether the central database does compare said sample genotypes to said collection of candidate parent genotypes or if the central database only has this ability under some unspecified conditions.

The Court of Appeals for the Federal Circuit has held and repeatedly affirmed that definiteness of claim language must be analyzed, not in a vacuum, but in light of (1) the content of the particular application disclosure, (2) the teachings of the prior art, and (3) the claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. See, e.g., *In re Marosi*, 710 F.2d 799, 218 U.S.P.Q. 289 (Fed. Cir. 1983); *Rosemount, Inc. v. Beckman Instruments, Inc.*, 727 F.2d 1540, 221 U.S.P.Q. 1 (Fed. Cir. 1984); *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 U.S.P.Q. 303 (Fed. Cir. 1983); and *Atmel Corp. v. Information Storage Devices, Inc.*, 198 F.3d 1374, 53 U.S.P.Q.2d 1225 (Fed. Cir. 1999) (district court failed to consider the knowledge of one skilled in the art when interpreting the patent disclosure).

35 U.S.C. § 112, ¶ 2 requires that the specification of a patent "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."

The common thread in all of these cases is that claims were held indefinite only where a person of ordinary skill in the art could not determine the bounds of the claims, i.e., the claims were insolubly ambiguous.

Claims are not indefinite merely because they present a difficult task of claim construction. *Halliburton Energy Services, Inc. v. M-I LLC* 2007-1149 Instead, "[i]f the meaning of the claim is discernible, even though the task may be formidable and the conclusion may be one over which reasonable persons will disagree, we have held the claim sufficiently clear to avoid invalidity on indefiniteness grounds." *Halliburton Energy Services, Inc. v. M-I LLC* 2007-1149 ( quoting *Exxon Research & Eng'g Co. v. United States*, 265 F.3d 1371, 1375 (Fed. Cir. 2001)) (citations omitted). Proof of indefiniteness requires such an exacting standard because

claim construction often poses a difficult task over which “expert witnesses, trial courts, and even the judges of this court may disagree.” *Id.* Nevertheless, this standard is met where an accused infringer shows by clear and convincing evidence that a skilled artisan could not discern the boundaries of the claim based on the claim language, the specification, and the prosecution history, as well as her knowledge of the relevant art area.

“Only claims ‘not amenable to construction’ or ‘insolubly ambiguous’ are indefinite.” *Datamize v. Plumtree Software, Inc.*, 417 F.3d 1342, 1347-48 (Fed.Cir.2005) (citations omitted). *Marley Mouldings, Ltd. v. Mikron Industries*, 417 F.3d 1356, 1361 (Fed.Cir.2005) held that when a claim “is not insolubly ambiguous, it is not invalid for indefiniteness.” *See also Bancorp Servs., L.L.C. v. Hartford Life Ins. Co.*, 359 F.3d 1367, 1371 (Fed.Cir.2004) (“We have held that a claim is not indefinite merely because it poses a difficult issue of claim construction; if the claim is subject to construction, i.e., it is not insolubly ambiguous, it is not invalid for indefiniteness.”).

Claims 50-58 remain indefinite over the recitation of the phrase “extracting nucleic acid corresponding to distinct populations.” Corresponding is alleged to not be an art recognized term to describe the relationship between a nucleic acid sequence and a distinct population of origin. The term corresponding has been removed from the phrase, which now recites of “extracting nucleic acid from each of said distinct populations of origin.”

**Regarding 35 U.S.C. § 102(a)**

Applicants respectfully traverse the rejection of claims 40 and 41 under 35 U.S.C. § 102(a) as allegedly being anticipated by Tessier et al. (Animal Genetics 1998).

“[U]nless a reference discloses within the four corners of the document not only all of the limitations claimed but also all of the limitations arranged or combined in the same way as recited in the claim, it cannot be said to prove prior invention of the thing claimed and, thus, cannot anticipate under 35 U.S.C. § 102.”

Tessier et al.’s study is entirely based on an “empirical” estimation of effective population sizes and did not involve the actual steps recited claims 40 and 41. Applicants

respectfully request withdrawal of the rejection of claims 40 and 41 under 35 U.S.C. § 102(a) as allegedly being anticipated by Tessier et al. (Animal Genetics 1998).

The rejection of claims 42-43, 45-46, 50-52 and 59-60 under 35 U.S.C. §102(b) as allegedly anticipated by O'Reilly et al., Animal Genetics (1998) is respectfully traversed.

O'Reilly discloses a method for the determination of the parentage of a fish using compatibility analysis of microsatellites as markers. The use of microsatellite markers was found to be helpful for determining the parents of 729 atlantic salmon from a choice of 12 sets of parents, further crosses were simulated and the importance of scoring errors on the resolution and accuracy of such analyses was evaluated. In the analysis described by O'Reilly et al., all parent animals, as well as offspring, were farmed together and the resulting analysis involving full and half sibling offspring necessarily led to incorrect parentage assignments. As a result, O'Reilly neither teaches nor suggests candidate parent genotypes representing distinct populations of origin.

For the reasons explained above, Applicants submit that the claimed invention of claims 42-43, 45-46, 50-52 and 59-60 is distinct from O'Reilly and respectfully request withdrawal of this ground of rejection.

**Regarding 35 U.S.C. §103(a)**

The rejection of claims 44 and 47-48 under 35 U.S.C. 103(a) as being unpatentable over O' Reilly et al (Animal Genetics 1998) in view of Agresti (Aquaculture 2000) is respectfully traversed. The deficiencies of the primary reference are described above. The instant rejection relies on the alleged teachings of the primary reference, which are addressed above. The deficiencies of the O'Reilly are not cured by viewing O'Reilly in combination with Agresti. Accordingly, for the reasons set forth above with regard to O'Reilly being distinct from the claimed invention, removal of the rejection of claims 42 and 45-46 under 35 U.S.C. 103(a) as being unpatentable over O' Reilly et al (Animal Genetics 1998) in view of Agresti (Aquaculture 2000) is respectfully requested.

The rejection of claim 49 under 35 U.S.C. §103(a) as being unpatentable over O' Reilly et al (Animal Genetics 1998) in view of Garcia de Leon (Aquaculture 1998) is respectfully

traversed. The deficiencies of the primary reference are described above. The instant rejection relies on the alleged teachings of the primary reference, which are addressed above. The deficiencies of the O'Reilly are not cured by viewing O'Reilly in combination with Garcia de Leon. Accordingly, for the reasons set forth above with regard to O'Reilly being distinct from the claimed invention, removal of the rejection of claim 47 under 35 U.S.C. §103(a) as being unpatentable over O' Reilly et al (Animal Genetics 1998) in view of Garcia de Leon (Aquaculture 1998) is respectfully requested.

The rejection of claim 53 under 35 U. C. 103(a) as being unpatentable over O' Reilly et al (Animal Genetics 1998) in view of Fries (Nature 2001) is respectfully traversed. The deficiencies of the primary reference are described above. The instant rejection relies on the alleged teachings of the primary reference, which are addressed above. The deficiencies of the O'Reilly are not cured by viewing O'Reilly in combination with Fries. Accordingly, for the reasons set forth above with regard to O'Reilly being distinct from the claimed invention, removal of the rejection of claim 53 under 35 U.S.C. §103(a) as being unpatentable over Reilly et al (Animal Genetics 1998), in view of Fries et al (Nature 2001) is respectfully requested.

The rejection of claims 56-58 under 35 U.S.C. §103(a) as being unpatentable over Reilly et al (Animal Genetics 1998), Fries et al (Nature 2001), and in further of Cox (US Patent 6406847 Filed 1999) is respectfully traversed. The deficiencies of the primary reference are described above. The instant rejection relies on the alleged teachings of the primary reference, which are addressed above. The deficiencies of the O'Reilly are not cured by viewing O'Reilly in combination with Fries et al. and Cox. Accordingly, for the reasons set forth above with regard to O'Reilly being distinct from the claimed invention, removal of the rejection of claims 56-58 under 35 U.S.C. §103(a) as being unpatentable over Reilly et al (Animal Genetics 1998), Fries et al (Nature 2001), and in further of Cox (US Patent 6406847 Filed 1999) is respectfully requested.

The rejection of claims 61-62 under 35 U.S.C. §103(a) as being unpatentable over Reilly et al (Animal Genetics 1998) in view of Dodds (US Patent 6287254) is respectfully traversed. The deficiencies of the primary reference are described above. The instant rejection relies on the alleged teachings of the primary reference, which are addressed above. The deficiencies of the

O'Reilly are not cured by viewing O'Reilly in combination with Dodds. Accordingly, for the reasons set forth above with regard to O'Reilly being distinct from the claimed invention, removal of the rejection of claims 61-62 under 35 U.S.C. §103(a) as being unpatentable over Reilly et al (Animal Genetics 1998) in view of Dodds (US Patent 6287254) is respectfully requested.

### **Regarding Double Patenting**

The provisional rejection of claims 40-62 for obviousness-type double patenting over claims 38-61 of co-pending Application No. 10/349,331, is respectfully traversed. Applicants respectfully request that this rejection be held in abeyance until there is an indication of allowable subject matter.

### **CONCLUSION**

In light of the amendments and remarks herein, Applicants submit that the claims are now in condition for allowance and respectfully request a notice to this effect. The Examiner is invited to call the undersigned attorney if there are any questions.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 502624 and please credit any excess fees to such deposit account.

**Application No.: 10/643,775**

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Respectfully submitted,

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